Wideband High Voltage Divider

OVERVIEW

The PVD series is a type of wideband voltage divider which is designed to measure single-ended high voltage, and without need for power supplies. The PVD series can measure multiple single-ended signal such as DC, AC and pulse.

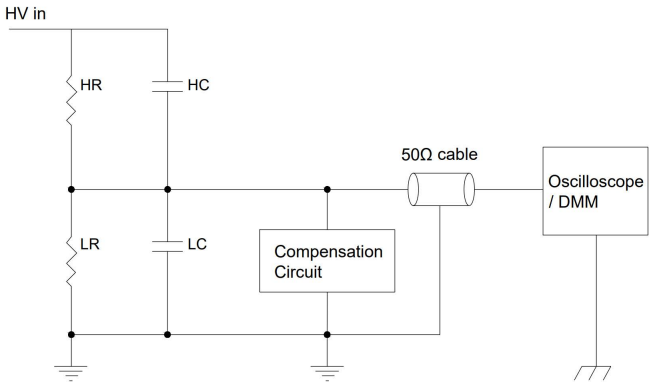
The PVD series scaled down version of its input signal, which can easily be processed by both DAQ and universal instrumentations, such as osilloscope,digital multimeters, etc.

HARDWARE DESCRIPTION

The PVD series high voltage dividers are RC dividers designed to produce precisely attenuated signals over a very wide bandwidth. The circuit diagram is shown below. The high voltage divider network consists of a high voltage network represented by a parallel capacitor and resistor, and a low voltage network which consists of a parallel RC network and a conpensation circuit. The measured signal can connect to the PVD series high voltage dividers via a banana connector. The signal from the PVD series high voltage dividers come out on a standard BNC Jack, which can be connected to the DMM(Digital Multimeter) or oscilloscope by using 50Ω double shielded cable.

SPECIFICATION

Input-Output Non-Linearity	< 220 ppm
Input Signal Type	Single-ended
Output Signal Type	Single-ended
Output Offset Voltage (referenced to output)	< ±10 mV
Input Connector	Banana Plug
Output Connector	BNC (Jack)



System block diagram

ELECTRONICAL

Model Number	PVD-10	PVD-25
Standard Divider Ratio	1000 : 1	1000 : 1
Max Peak Voltage (DC,AC)	10 kV	25 kV
Max Peak Voltage (Pulse)	12 kV	30 kV
Accuracy (DC - 2 Hz)	<0.15%	<0.15%
Accuracy (2 Hz - 200 Hz)	<1.5%	<1.5%
Accuracy (200 Hz - 5 MHz)	<2%	<2%
Accuracy (> 5 MHz)	<4%	<5%
Risetime	11 ns	3 ns
Bandwidth (-3dB point)	30 MHz	110 MHz
Input Impedance	200 MΩ / 9 pF	300 MΩ / 6 pF

ENVIRONMENTAL

Operating Temperature	– 35 to 70 °C
Storage Temperature	– 40 to 80 °C

MECHANICAL

Modle Number	PVD-10	PVD-25
BNC Cable Length	5 m	5 m
Dimensions (mm)	89Ø x 267.5	89Ø x 267.5

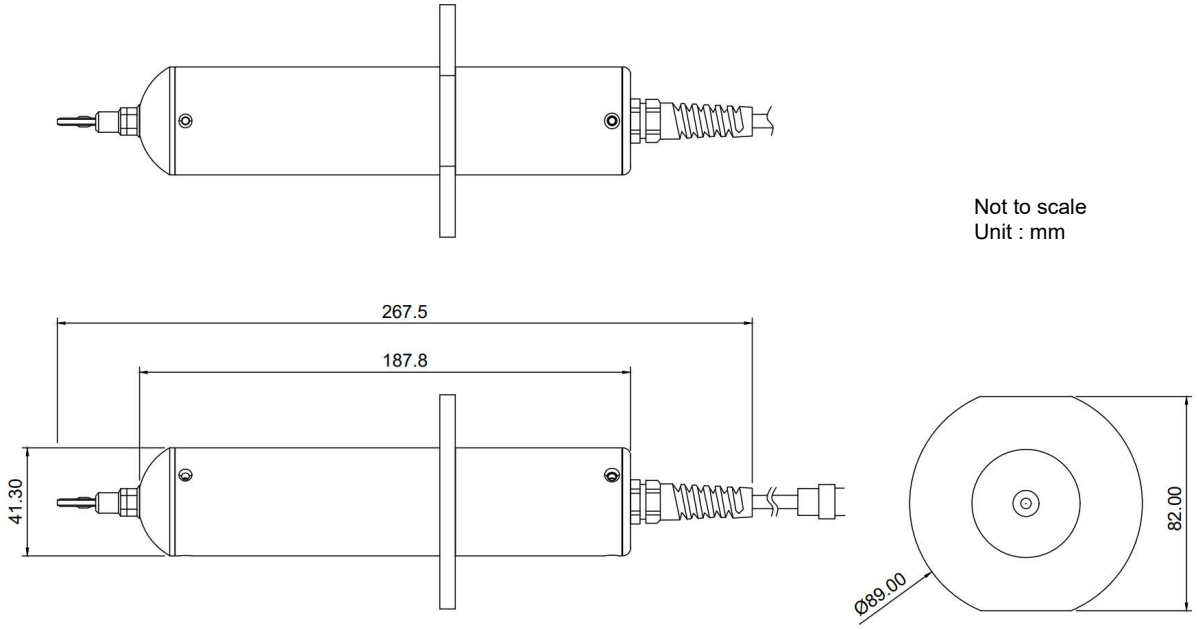
NOTICE

1、 In general, the PVD series high voltage dividers have derated characteristic when measuring high frequency AC signal, due to heating in AC dielectric loss and capacitive ESR.

2、The input pulse should not be too high in frequency and too long in duration, when the amplitude of pulse is up to max peak voltage.

3、When DC voltage applied, PVD series high voltage dividers should not have derating phenomenon.

MECHANICAL DIMENSIONS



Not to scale
Unit : mm

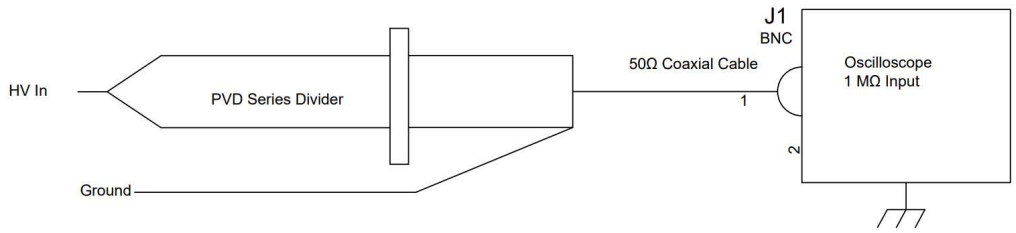
HARDWARE CONFIGURATION

I Connect BNC cable to the output of PVD series high voltage dividers. Make sure the BNC Jack is connected to the instrument which should be grouned to safety ground.

II Connect the crocodile clamp of the PVD series high voltage dividers to the ground (generally is earth ground) of the system, and then connect the input terminal of the PVD series high voltage dividers to the measured signal terminal.

III The BNC output cable can be connected directly to the oscilloscope, and the oscilloscope should be grounded to safety ground. A 1.111 MΩ resistance can parallel with digital multimeter (10 MΩ input) to produce a 1 MΩ input impendence.

PVD Series Divider Driving Oscilloscope in Standard Configuration



PVD Series Divider Driving Meter with Fixed Shunt Resistor